The principles of economics

Some lies my teachers told me

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Preface

Most students who approach neoclassical economics with a critical eye usually begin by thinking that neoclassical theory is quite vulnerable. They think it will be a push-over. Unless they are lucky enough to interact with a competent and clever believer in neoclassical economics, they are likely to advance rather hollow critiques which survive in their own minds simply because they have never been critically examined.

Having just said this, some readers will say, 'Oh, here we go again with another defense of neoclassical theory which, as every open-minded person realizes, is obviously false.' This book is not a defense of neoclassical theory. It is an examination of the ways one can try to criticize neoclassical theory. In particular, it examines inherently unsuccessful ways as well as potentially successful ways.

As with the question, 'Is there sound in the forest when there is nobody there to listen?', there is equally a question of how one registers criticisms. Who is listening? Who does one wish to convince? Is the intended audience other people who will agree in advance with your criticisms? Or people who have something to gain by considering them, namely believers in the propositions you wish to criticize? If you write for the wrong audience there may be nobody there to listen!

My view has always been that whenever I have a criticism I try to convince a believer that he or she is wrong since only in this way will I be maximizing the possibilities for my learning. Usually when the believer is competent I learn the most. Sometimes I learn that I was simply wrong. Other times I learn what issues are really important and thus I learn how to focus my critique to make it more telling. I rarely learn anything by sharing my critiques with someone who already rejects what I am criticizing. Unfortunately, it is easier to get a non-believer to share your critique than to get a believer to listen. Nevertheless, this is the important challenge.

I am firmly convinced that any effective critique must begin by a thorough and sympathetic understanding. It is important to ask: What is the problem that neoclassical economics intends to solve? What constitutes an acceptable solution? With these two questions in mind, I continue to try to understand neoclassical economics. Over the last twenty-five years I have been fortunate to have many colleagues at Simon Fraser University who are neoclassical believers. While I began as a student who considered neoclassical economics to be a push-over, thanks to my colleagues I have come to respect both its sophisticated structure and its simplistic fundamentals. My colleagues have listened to my complaints in seminars and they have taken the time to read my papers. When they thought I was wrong they told me so. And when they did not agree, and particularly when they said they did not know how to answer, they told me so. I do not think one should expect any more from one's colleagues.

This book presents what I think remain as possible avenues for criticism of neoclassical economics. The simplicity of neoclassical economics is that it has only two essential ideas: (1) an assumption of maximizing behaviour and (2) an assumption about the nature of the circumstances and constraints that might impede such behaviour. The obvious avenue for criticism is to attack the assumption of maximization behaviour. As we shall see, this turns out to be the most difficult avenue. Moreover, since both types of assumptions are essential, there are many other possibilities. For example, the problem is not whether one can try to maximize one's utility in isolation but whether a society consisting of similarly motivated people can achieve a state of coordination that will permit them all to achieve their goals. What are the knowledge requirements for such coordination? What are the logical requirements for the configuration of constraints facing these individuals?

Once one recognizes that the acceptance and use of the maximizing hypothesis creates many difficulties for the model-builder, the number of avenues multiplies accordingly. Perhaps the idea of a coordinated society of maximizing individuals is not totally implausible. The question that we all face as economic theorists is whether we can build models that demonstrate such plausibility. Of course this raises the methodological question of one's standard of plausibility but for the most part I will not be concerned with this question. I will be more concerned instead with some technical issues even though questions of an epistemological or methodological nature cannot be totally avoided. It is in the two areas of epistemology and methodology that neoclassical critiques get very murky once one recognizes that to explain the behaviour of an individual decision-maker one must deal with how that individual knows what he or she needs to know in order to make a decision that will contribute to a coordinated society.

While knowledge, information and uncertainty are often recognized today, rarely is there more than lip-service given to a critical discussion of their theoretical basis. How does information reduce a decision-maker's uncertainty? What concept of knowledge or learning is presumed by the neoclassical theorist? Typically, the presumed theory is based on a seventeenth-century epistemology that was refuted two hundred years ago. If knowledge, information or uncertainty matter then it is important for us to understand these concepts.

This book is written for those who like me wish to understand neoclassical economics. In particular, it is for those who wish to develop a critical understanding whether one wishes to improve neoclassical theory or just criticize it. I cannot preclude true believers who are looking for research projects that would lead to needed repairs. They are welcome, too.

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Prologue

Understanding neoclassical economics through criticism

Far too often when one launches a criticism of a particular proposition or school of thought many bystanders jump to the conclusion that the critic is taking sides, that is, the critic is stating an opposing position. Sometimes, it is merely asked, ‘Which side are you on?’ Criticism need not be limited to such a context.

Since the time of Socrates we have known that criticism is an effective means of learning. Criticism as a means of learning recognizes that we offer theories to explain events or phenomena. One explains an event by stating one or more reasons which when logically conjoined imply that the event in question would occur. While some of the reasons involve known facts, making assumptions is unavoidable. Simply stated, we assume simply because we do not know.

Economics students are quite familiar with the task of using assumptions to form explanations of economic phenomena. But, some may ask, will just any assumptions suffice? Apart from requiring that the phenomena in question are logically entailed by the assumptions ventured, it might seem that anything goes. Such is not the case. The ‘Principles of Economics’ are essential ingredients of *every* acceptable explanation in modern neoclassical economics. For example, it would be difficult to see how one could give a *neoclassical* explanation of social phenomena that did not begin with an assumption that the phenomena in question were the results of maximizing behaviour on the part of the relevant decision-makers. Recognizing that the Principles are essential for any acceptable explanation is itself an important consideration for any criticism.

Whether one’s purpose in criticizing is to dispute a proposition (or dispute an entire school of thought) or just to try to learn more, understanding what it takes logically to form an effective criticism would seem to be an important starting point.

NECESSARY VS SUFFICIENT REASONS

At the very minimum, explanations are logical arguments. The logic of explanation is simple. The ingredients of an argument are either assumptions or conclusions. The conclusions of an explanation include statements which are sometimes called necessary conditions.[1] One states explicit assumptions which are all assumed to be true and then one provides the logical structure which shows that for all the assumptions to be true the conclusion (regarding the events or phenomena to be explained) must *necessarily* be true. Despite how some early mathematical economics textbooks state the issues, there usually is no *single* assumption or conclusion which is a sufficient condition.[2] Usually, the sufficient condition is the conjunction (i.e. the compound statement formed by all) of the assumptions. The error of the early textbooks is that if there are *n* assumptions and *n*–1 are true, then the *n*th assumption appears to 'make' the conjunction into the sufficient compound statement. Of course, any one of the *n* assumptions could thus be a sufficient condition when all the others are given as true.[3] In short, the conclusions are necessary and the *conjunction* of all the assumptions is sufficient.

What is not always recognized is that it is the presumed necessity of the *individual assumptions* forming the conjunction that is put at stake in any claim to have provided an explanation which could form the basis for *understanding* the events or phenomena in question (e.g. 'Ah, now I understand, it is because people always do X'). This may seem rather complicated, so let me explain. We offer explanations in order to understand phenomena. To accept an explanation as a basis for understanding, one would have to have all assumptions of the explanation be true (or at least not known to be false). Otherwise, the logic of the explanation has no force. The logic of the explanation is that whenever all the assumptions are true then the events or phenomena in question will occur. There is nothing that one can say when one or more of the assumptions is false since the logic of explanation requires true assumptions.

EXPLAINING VS EXPLAINING AWAY

A key aspect of the above discussion of explanation is that the events or phenomena in question are accepted as 'reality' (rather than mere 'appearances'). For example, the Law of Demand (i.e. the proposition that demand curves are *universally* downward sloping) was often taken as a fact of reality and thus we were compelled to offer explanations of it. Today, on the other hand, disequilibrium phenomena such as 'involuntary unemployment' may be *explained away* as mere appearances. Supposedly, in the latter case, if we could see all the costs (such as transaction costs) then we could see that what appears to be a disequilibrium is really an equilibrium.[4]

The distinction between explaining and explaining away involves one's presumptions. If one thinks the decision-maker is always maximizing then any appearance of 'irrationality' can be explained away by demonstrating that the true utility function is more complicated [e.g. Becker 1962]. Explaining away takes the truth of one's explanation for granted; thus whatever one may think reality is can be seen to be mere appearance (e.g. apparently irrational behaviour). Moreover, reality is seen to be the utility function that would have to exist to maintain the truth of one's explanation. If one wishes to explain (as opposed to engaging in explaining away) then one's assumption regarding the *a priori* form of the objective function must be stated in advance and thus put at stake (i.e. not made dependent on the observed behaviour). In this sense, one's explanation makes maximization a necessary assumption (although not necessarily true – its truth status is still open to question). The claim is that we understand the behaviour simply *because we assume* maximization. For most of our considerations here, it will not matter whether we are explaining or explaining away since in either case one must put either the truth status of one's assumptions or the logical validity of one's argument at stake and thus open to criticism.

INTERNAL VS EXTERNAL CRITICISM OF NEOCLASSICAL ECONOMICS

Given the observations so far, if one wishes to criticize an argument, there are basically two general approaches depending on whether or not one is willing to accept the aim of the argument even if only for the purposes of discussion. If one accepts the aim of the argument then one can offer *internal* criticism, that is, criticism that examines the internal logic of the argument without introducing any new or external considerations. In contrast, methodologists will often refer to their favourite philosophical authorities to quibble with the purpose of one's argument rather than try to find faults in the logic of the argument. This, of course, leads to arguments at cross-purposes and usually carries little weight with the proponents of the argument. For example, advocates of a methodology that stresses the utility of simplicity (e.g. Friedman's Instrumentalism) might wish to develop explanations based on perfect competition while those who wish to maximize generality are more likely to see virtue in developing imperfectly competitive models which see perfect competition as a special case. Criticizing perfect competition models for not being general enough or criticizing imperfect competition models for not being simple enough does not seem to be very useful. Nevertheless, the history of economics is populated by many such disputes based on such *external* critiques.

Internal critiques focus on two considerations. The most obvious consideration is the truth status of the assumptions since they must all be true for an explanation to be true. The other concerns the sufficiency of the argument. If one wished to criticize an explanation directly, one would have to either empirically refute one or more of the assumptions or cleverly show that the argument was logically insufficient. If one could refute one of the assumptions, one would thereby criticize the possibility of claiming to *understand* the events or phenomena in question with the given argument. Much of the criticism of neoclassical economics involves such a direct form of criticism. Unfortunately, many of the assumptions of neoclassical economics are not directly testable and others are, by the very construction of neoclassical methodology, put beyond question (this matter of putting assumptions beyond question will be discussed in Chapter 1).

Even when an assumption cannot be refuted, one can criticize its adequacy to serve as a basis for *understanding* by showing that it is not necessary for the sufficiency of the explanation. To refute the necessity of an assumption one would have to build an alternative explanation that does not use the assumption in question and thereby prove that it is not necessary. To refute the sufficiency of an argument one must prove that it is possible to have the conclusion be false even when all of the assumptions are true. This latter approach is most common in criticisms of equilibrium models where one would try to show that even if all the behavioural assumptions were true there still might not exist a possible equilibrium state.

It might be thought that the criticism most telling for the argument as a whole would be to criticize the truth of one's conclusion. But since explanations are offered to explain the *given* truth of the conclusion, such a brute force way of criticizing is usually precluded. However, an indirect criticism could involve showing that other conclusions entailed by the argument are false. This approach to criticism is not commonly followed in economics.

If the theorist offering the explanation has done his or her job, there will not be any problem with the sufficiency of the logic of the argument. Thus, theoretical criticism usually concerns whether the argument has hidden assumptions (or ones taken for granted) which are not plausible or are known to be false. Such a critique is usually presented in a form of axiomatic analysis where each assumption is explicitly stated. The most common concerns of a critical nature involve either the mechanics of equilibria or the knowledge requirements of the decision-makers of neoclassical models. I will pursue various essential aspects of maximization and equilibrium in Chapters 1 to 5 and I will examine the questioning of the adequacy of the essential elements of individual decision-making in Chapters 6 to 14.

THE DANGERS OF CRITICIZING CRITIQUES

There is another level of discussion that it is not often attempted. When a particular argument has generated many *accepted* critiques, obviously there arises the opportunity to critically examine the critiques. Given the sociology of the economics profession this approach is rather dangerous. If you treat each critique as an internal critique (by accepting the aims of the argument) you leave yourself open to a claim that you are defending the original argument from *any* critique. This claim is a major source of confusion even though it is not obviously true. I have a first-hand familiarity with this confusion. When I published my critique of the numerous critiques of Friedman's famous 1953 essay on methodology [Boland 1979a], far too many methodologists jumped to the conclusion that I was defending Friedman. My 1979 argument was simply that the *existing* critiques were all flawed. Moreover, while I defended Friedman's *essay* from specific existing critiques it does not follow that I was defending him from *any* conceivable critique. A similar situation occurred in response to my general criticism of existing arguments against the assumption of maximizing behaviour [Boland 1981]. Many readers jumped to the conclusion that I was defending the truth status of this assumption. Herbert Simon has often told me I was wrong. But again, facing the facts of how the maximization assumption is used in economics, and in particular why it is put beyond question, in no way implies an assertion about the assumption's truth status – even though the assumption might actually be false.

The difficulty with my two critical papers about accepted critiques is that too often the economics profession requires one to take sides in methodological disputes while at the same time not allowing open discussion of methodology. Specifically, those economists who side with Friedman's version of Chicago School economics were thrilled with my 1979 paper but those who oppose Friedman rejected it virtually sight-unseen. Clearly few of the anti-Chicago School critics actually finished reading my paper. I reach this conclusion because at the end of my paper I explicitly stated how to form an effective criticism. Only one of the critics whom I criticized responded [see Rotwein 1980]. My paper apparently disrupted the complacency among those opposed to Friedman's methodology – it appears that they were left exposed on the methodology flank without a defense against Friedman's essay. This is particularly so since by my restating Friedman's methodology, and thereby showing that it is nothing more than commonplace Instrumentalism, it was probably clear to Friedman's opponents that their methodological views did not differ much from his.

While there is the potential for everyone to learn from critiques of critiques, if the audience are too eager to believe any critique of their favourite boogey-man they read, then all the clearly stated logical arguments in the world will not have much effect. Despite the confusion, and regardless of whether anyone else learned from my two papers on effective criticism, certainly I think I learned a lot. Unfortunately, I probably learned more about the sociology of the economics profession than anything else!

UNDERSTANDING AND CRITICISM: WERE MY TEACHERS LYING TO ME?

Even after having recognized the dangers, I wish to stress that I still think criticism is an effective means of learning and understanding. Moreover, understanding without criticism is hollow. As a student I think I learned much more in classes where teachers allowed me to challenge and criticize them on the spot. Sometimes I thought they were telling me 'lies' and most of the time I was wrong. Of course, I doubt very much that teachers intentionally lie to their students. Nevertheless, many textbooks do contain lies with regard to the essential nature of neoclassical economics and students and their teachers would learn more by challenging their textbooks.

Each of the following chapters is concerned with a specific 'lie', that is, with an erroneous notion that has been foisted on us by various textbook writers and teachers. The first such notion I discuss in Chapter 1 which is about the claim by many critics of neoclassical economics that the assumption of maximization is a tautology and thus *inherently* untestable. I will explain why this claim is false. The remaining chapters explore various theoretical avenues for criticism of neoclassical economics that have interested me over the last twenty-five years. With the exception of Chapters 5, 7 and 9, my discussion will focus primarily on consumer demand theory since neoclassical economists give more attention to demand theory than they do to the theory of supply.

In Chapters 2 and 3 I begin by determining the nature of the essential ingredients of neoclassical economics, namely, the Principles of Economics, starting with Alfred Marshall's view of these principles. While it may not be possible to simply deny that people maximize, we can question the necessary conditions for maximization along lines suggested by Marshall. Chapter 2 is concerned with the lie perpetrated by some critics that neoclassical economics is inherently 'timeless'. Chapter 3 is concerned with the lie perpetrated by friends of neoclassical economics who, by ignoring one of the fundamental requirements for any maximization-based explanation, suggest that the maximization assumption is universally applicable. As Marshall pointed out long ago, maximization presumes the Principle of Continuity, that is, a sufficiently free range of choice if maximization is to explain choice.

The logical requirements for equilibrium are examined in Chapters 4 and 5 with an eye on how equilibrium models can be construed as bases for understanding economic phenomena. Chapter 4 is concerned with the common misleading notion that model-builders need to assure only that the number of unknown variables equals the number of equations in the model. Chapter 5 is about the erroneous notion that models of imperfect competition can be constructed from perfect competition models by merely relaxing only the price-taker assumption.

Chapters 6 to 8 are concerned with two neglected elements of every neoclassical model. Specifically, they are about the knowledge and institutional conditions needed for decision-making and how these requirements can be used as a basis for criticizing neoclassical economics. Chapter 6 examines the claim that Austrian economics is superior to neoclassical theories because the former explicitly recognizes the necessity of dealing with the knowledge required for utility or profit maximization. It is argued that both versions of economics suffer from the inability to handle knowledge dynamics. Chapter 7 examines the questionable notion that the Principles of Economics can be applied to technology when explaining the historical developments of an economy. And Chapter 8 questions the applicability of Marshall's Principles to a similar question concerning the development of the institutions of an economy.

Chapters 9 to 11 consider some critiques which claim there are missing elements in neoclassical economics particularly with regard to the role of the individual in neoclassical theory. While some proponents of Post-Keynesian economics claim that Keynes offered a blueprint for a different approach to explaining economic behaviour, in Chapter 9 I argue that such a view may be misleading readers of his famous book. I think his *General Theory* is better understood as a critique of neoclassical economics, one that was written to convince believers in neoclassical economics rather than provide the desired revolutionary blueprint. Chapter 10 explains why neoclassical economics does not need an infusion of social psychology as some critics claim. And Chapter 11 pushes beyond Chapter 6 to challenge those neoclassical theorists who think the behaviour of individuals can be explained without dealing with how individuals know they are maximizing.

Chapters 12 to 14 deal with a few technical questions raised by those economists who attempt to construct logically complete formal models of consumer choice. Chapter 12 examines the common lie that lexicographic orderings are not worthy of consideration by a neoclassical model-builder even though many of us may think that they are certainly plausible. Chapter 13 examines the alleged equivalence of Paul Samuelson's revealed preference analysis and the ordinal demand theory of R.G.D. Allen and John Hicks. For many decades the critical issue of consumer theory has been whether we can explain why demand curves are downward sloping. Today many theorists think demand theory can be developed without reference to downward sloping demand curves. In Chapter 14 I show why downward sloping demand curves have to be explained in any neoclassical theory of prices.

Each of these chapters represents the understanding of neoclassical economics that I have acquired from various attempts on my part and others' to criticize the logical sufficiency of neoclassical explanations. The criticisms in question are almost always ones which argue that there are hidden presumptions that might not survive exposure to the light of day. One thing which will be evident is that I will often be discussing articles published in the 1930s. This is no accident, as I think that many of the problems considered in those 'years of high theory' were the most interesting and critical. However, my interest in these old papers is not historical. Many of the problems discussed during that period unfortunately remain unresolved today. If I had my way we would all go back to that period of 'high theory' and start over at the point where things were interrupted by the urgencies of a world war.

NOTES

1 For example, for a differentiable function to be maximized, the 'necessary conditions' are (1) that its first derivative must be zero and (2) that its second derivative be negative. These two necessary conditions merely follow from what we mean by maximization.
2 Years ago, it was typically said that for a differentiable function, given a zero first derivative, the function's second derivative being negative is the 'sufficient condition' for maximization [e.g. see Chiang 1974, p. 258].
3 The only time a single assumption is sufficient is when there is just one assumption. The statement 'all swans are white' is sufficient to conclude that the next swan you see will be white.
4 See further Robert Solow's [1979] examination of the usual ways disequilibria are explained away in macroeconomics.

Part I

The essential elements